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ABSTRACT

The National Center for Research in Vocational Education (NCRVE) partially supported 10 new or extensively revised leadership development projects at 7 institutions of higher education designed to improve the leadership attributes of graduate students in vocational education. The projects adopted as instructional objectives one or more of the leadership attributes proposed by NCRVE and cooperated in implementing a common evaluation plan. From 180 participants and project directors, NCRVE collected quantitative data about participants' preprogram leadership attributes, satisfaction with the program, postprogram attributes, and leadership behavior and performance 6 months after the program as well as qualitative data about perceptions about effectiveness of program activities. Meta-analysis results indicated the following: participants were very satisfied with the programs and believed they were of great value to their professional development; overall, the programs had a significant impact on the participants' perceptions of their leader attributes; the number of leader attributes that improved significantly appeared related to certain program characteristics; programs were not very successful in developing prespecified attributes; and of the six attributes that best explained leader effectiveness, two (adaptable, open to change and insightful) readily improved and two (team building and willing to accept responsibility) were more resistant to change. (YLB)

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HIGHLIGHTS FROM AN EVALUATION OF TEN LEADERSHIP DEVELOPMENT PROGRAMS FOR GRADUATE STUDENTS IN VOCATIONAL EDUCATION

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HIGHLIGHTS FROM AN EVALUATION OF TEN LEADERSHIP DEVELOPMENT PROGRAMS FOR GRADUATE STUDENTS IN VOCATIONAL EDUCATION

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BACKGROUND

One goal of the National Center for Research in Vocational Education (NCRVE) at the University of California at Berkeley is to increase the number and quality of leaders prepared to meet present and future challenges facing vocational education. NCRVE seeks to accomplish this general purpose by stimulating, facilitating, and evaluating educational interventions which affect positive change in selected "leader attributes." These leader attributes are the characteristics, knowledge, and skills of individuals which increase the likelihood that they will (1) perceive opportunities to behave as leaders, (2) grasp those opportunities, and (3) succeed in influencing group behaviors in a wide variety of situations and professional roles.

Toward this end, NCRVE partially supported new or extensively revised leadership development projects at seven institutions of higher education designed to improve the leader attributes of graduate students in vocational education[1]. The projects took multiple forms, varying in approach and length (e.g., courses, workshops, and internships). Each adopted as instructional objectives one or more of the leader attributes proposed by NCRVE, and each agreed to cooperate in implementing a common evaluation plan. The responsibility of NCRVE has been to evaluate the effectiveness of the projects so that more can be learned about the strategies and activities for developing leader attributes.

EVALUATION QUESTIONS

The nine key evaluation questions were as follows:

1. What types of leadership activities have been developed and implemented by cooperating universities?

2. How many, and what types of people participated in the leadership development programs?

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[1]The seven institutions were Colorado State University (conducted two programs), Indiana State University, Iowa State University, Mississippi State University (conducted two programs), North Carolina State University, University of Georgia, and University of Maryland. In addition, a state supported program at the University of Minnesota agreed to be evaluated. This totals ten programs.

3. What were the costs of different leadership programs?

4. How satisfied were participants with the various leadership development programs?

5. To what degree did participants perceive a change in their leader attributes as a result of participating in the leadership development programs?

6. To what extent did the leadership development activities affect how participants perceive their ability to behave and perform as leaders?

7. What kinds of impact did the leadership development program have on the institutions' involvement in developing and maintaining leadership learning activities for their students?

8. What activities were considered particularly effective and what leader attributes did they impact?

9. What recommendations can be made for improving leadership development activities?

PERSPECTIVE

Even a cursory review of the literature on leadership reveals that a great deal has been written by authors from a wide variety of disciplines and fields of practice. Despite all the attention (or perhaps because of it), the topic presents a conceptual snakepit. There is no agreement about what leadership is, why it occurs, how it is best developed, or how it should be assessed. Fortunately, there is consensus that behaviors can be related to performance as a leader, and that educational interventions can affect the behavior of leaders. Consequently, the first task of NCRVE was to create its own conceptualization of leadership and leadership development (Moss & Liang, 1990) and its own instrument, the *Leader Attributes Inventory (LAI)*, for assessing leadership development (Moss, Johansen, & Preskill, 1991).

At the heart of the conceptualization are thirty-seven leader attributes which are hypothesized to be positively related to effective performance as a leader—especially a leader in vocational education. Three studies have been completed to date by NCRVE

which support that hypothesis (Moss & Johansen, 1991). Using the *LAI* instrument, which contains the thirty-seven attributes, correlations between each of the attributes and subordinates' perceptions of leader effectiveness were found to range from .56-.82 (averaging .70); a multiple correlation coefficient of .90 was attained by combining six of the thirty-seven attributes: (1) motivating others; (2) team building; (3) adaptable, open, flexible; (4) gathering and managing information; (5) willing to accept responsibility; and (6) insightful.

Given some empirical evidence supporting the validity of the leader attributes, a conference was held in 1990 for teacher educators in graduate programs of vocational education to familiarize them with NCRVE's concept of leadership and with promising leadership development strategies and activities. Following the conference, a "Request for Proposals" inviting proposals to design and conduct leadership development activities for graduate students was sent to all vocational teacher education departments offering graduate programs. The programs evaluated by NCRVE are those which were selected from among the applications received, funded, and subsequently conducted.

EVALUATION DESIGN

Table 1 presents the means of data collection used to answer each of the nine evaluation questions previously noted. Data was collected from participants and project directors. Some of it was quantitative; some of it was qualitative. Quantitative data provided information about the preprogram leader attributes of participants, their satisfaction with the program, their postprogram attributes, and their leadership behavior and performance six months after the program was concluded. Qualitative data included directors' and participants' perceptions about the effectiveness of various program activities.

Table 1
Evaluation Questions and Means of Data Collection

Key Questions	#1	#2	#3	#4	#5	#6	#7	#8	#9
Participant Satisfaction Survey				x				x	x
Leader Attributes Inventory		x			x			x	x
Behavior and Performance Survey						x			x
Faculty Interviews	x	x	x				x		x
Participant Focus Group	x			x	x			x	x
Cost			x						
Participant Description		x							
Faculty Description		x							
Activity Description	x							x	x

Guided by the nine evaluation questions, each program (project) was analyzed separately. Then, the findings about the ten programs were examined to derive insights useful to others who may be planning to conduct their own leadership development programs. In this meta-analysis stage, the units of analysis were most frequently programs (n=10), but attributes (n=37) and individuals (n=180) were also used. Statistical techniques for combining, comparing, and relating data were utilized.

PROGRAMS

The characteristics of the ten leadership development programs provided by the eight institutions varied considerably:

- They ranged in length and intensity from a total of six hours in one day to ninety hours of class instruction plus one-hundred eighty hours of outside assignments spread over a nine-month period.

- The number of students varied from four to twenty-five per class section with a mean of sixteen.

- Key features included (1) seminars with a semester-long internship; (2) seminars coupled with field trips (one to five days each); (3) seminars plus teams of participants instructing teachers in the field; (4) one-day workshops focused on health-related attributes; (5) seminars with a focus on self-assessment and planning for self-improvement; (6) three, two-and-a-half- to five-day retreats with a couple of months between sessions; and (7) team taught seminars with applications to contemporary problems in vocational education.

- The number of attributes chosen as instructional objectives by each program ranged from four to twenty-two.

- The attributes selected as instructional objectives by five or more programs included communication; visionary; confident, accepting of self; networking; and team building. Four of the thirty-seven attributes were not used as objectives by any of the programs: (1) accountability, (2) intelligent with practical judgment, (3) personal integrity, and (4) ethical.

- The average program cost per student (excluding indirect costs) was $1409, ranging from $174 to $4378.

PARTICIPANT CHARACTERISTICS

Table 2 presents a description of the one-hundred eighty students who participated in the ten programs.

Table 2
Participant Characteristics

Characteristic	Percent
Full-time student	39
Part-time student	61
Doctoral	61
Other	39
Male	49
Female	51
Caucasian	86
Other	14
Experience as a school administrator	47
No experience	53
Experience as a nonschool manager	68
No experience	32
Thirty-five years or less	27
Thirty-six years and over	73

LIMITATIONS

Like any study, this one has limitations. These should be made explicit before describing the results of the evaluation.

First, the sample of programs was small. Only ten programs were evaluated and, in the case of six-month follow-up data, only nine programs participated.

Second, no experimental controls were exercised. Given the present lack of knowledge about how leadership development programs can best be delivered, it was decided to encourage programs that used a wide variety of approaches. This necessitated structuring the evaluation as an exploratory rather than a confirmatory study. That is, the focus is on searching for relationships that might later be tested by more rigorous (experimental) designs.

Third, all the data on outcome variables was based upon participant self-perceptions and self-reports of activities. They were appropriate measures, but the credibility of the results would have been enhanced had it also been possible to secure the views of observers about participant behaviors.

Fourth, the follow-up period of six months is relatively short, albeit as long as circumstances permitted.

Given the limitations, the analysis of the data did not attempt to test *a priori* hypotheses to reach general conclusions. Instead, the intent of the meta-analysis was to explore the data relevant to each evaluation question so as to identify, describe, and summarize results in a way that would be maximally useful to those who will plan and conduct future programs of leadership development.

HIGHLIGHTS FROM THE RESULTS

The following highlights have been abstracted from the results of the meta-analysis of the ten leadership development programs:

1. Based upon both qualitative and quantitative data, participants were very satisfied with the programs and believed that they were of great value to their professional development:
   - The average rating of the ten programs on the question of "value of the experience" was 4.6 (five-point scale).
   - Participants not only felt that similar programs should be made available to other graduate students, but they also wanted the programs to be lengthened or additional programs provided.

2. Overall, the ten programs had a significant impact on the participants' perceptions of their leader attributes:
   - Of all possible increases in attribute scores on the *LAI*,[2] thirty-six percent had statistically significant ($p \leq .05$) gains.

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[2] Post minus pre (retrospective) scores on each of the attributes in ten different programs.

- A major effect of the programs was to lower participants' perceptions of their attributes as they were *before* the program (retrospective scores).
- The distributions of post (after treatment) attribute scores were much more compressed around a higher point value than were the pre (retrospective) scores. This effect was demonstrated by significant ($p \leq .05$) negative correlations between pre (retrospective) scores and gain scores on all thirty-seven attributes ($r = -.65$ to $-.85$).

3. The number of leader attributes that improved significantly appears to be related to certain program characteristics:
   - Readiness for change was developed by providing experiences for team building and assessing participants' attributes, with time for reflection and goal setting.
   - The more focused and structured the experience, and the more active the involvement of the student, the more likely it was for attributes to improve.
   - The number of hours of directly supervised instruction was positively related ($p \leq .05$) to the number of attributes that increased significantly ($r_S = .56$).

4. There was a positive relationship between program cost per student and hours of directly supervised instruction ($r_S = .68$):
   - A large portion of program cost was the instructor's salary, which varied according to the amount of time devoted to the program.
   - The relationship between cost per student and the number of attributes which increased significantly was *not* significant. Factors other than program length apparently contributed to program effectiveness. (See item 3, above.)

5. Programs were not very successful in developing prespecified attributes:
   - Just forty-one percent of the attributes specified as instructional objectives by the programs made significant ($p \leq .05$) gains.
   - Of all the significant attribute gain scores, only thirty-four percent were prespecified as instructional objectives; sixty-six percent were not prespecified as instructional objectives.
   - There are several possible reasons for this result: (1) individuals were given choices in reading and other assignments and thus were exposed to different

experiences; (2) individuals inevitably learn different things from the "same" instruction as they interpret the experience in terms of their own values and cognitive structures; (3) the attributes may not be entirely independent; and (4) program designers do not yet know the best way to develop specific attributes.

6. Improvements in leader attributes were *not* meaningfully related to any of the participant characteristics measured as a part of the evaluation.
   - Only three percent of the possible differences in *LAI* gain scores between the thirty-five years and under and the thirty-six years and over age groups were significant ($p \leq .05$).
   - Just four percent of the possible differences in *LAI* gain scores between the participants with experience as school administrators and the participants without that experience were significant.
   - About six percent of the possible differences in *LAI* gain scores between the participants with experiences as nonschool managers and the participants without that experience were significant.
   - Only four percent of the possible differences in *LAI* gain scores between women and men were found to be significant.
   - About five percent of the possible differences in *LAI* gain scores between participants pursuing the doctorate and those with other degree objectives were found to be significant.
   - Just four percent of the possible differences in *LAI* gain scores between participants who were part- and full-time students were found to be significant.

7. Of the six attributes that best explain leader effectiveness (Moss & Liang, 1990), two were readily improved[3] and two appeared more resistant to change[4]:
   - The readily changeable attributes were adaptable, open to change; and insightful.
   - The more resistant attributes were team building, and willing to accept responsibility.

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[3] Included as instructional objectives in three or more programs and significantly increased in sixty percent or more of the programs.

[4] Included as instructional objectives in four or more programs, but significantly improved in only twenty-five percent or less of those programs.

- Table 3 shows this relationship.

8. All thirty-seven leader attributes were used by participants during the six-month period following instruction:
   - Between fifteen and fifty-six percent of the respondents considered each of the leader attributes "most useful."
   - Six attributes were considered most useful by fifty percent or more of the respondents: (1) insightful; (2) adaptable, open to change; (3) visionary; (4) willing to accept responsibility; (5) communication (listening, oral, written); and (6) team building.

9. The attributes considered "most useful" by the highest percentage of the participants tended to be the attributes that best explained effective leader performance:
   - Four of the six attributes considered most useful by fifty percent or more of the respondents were also among the group of six attributes that best explained the variation in leader effectiveness (per the 1990 study by Moss and Liang). These were (1) adaptable, open to change; (2) insightful; (3) willing to accept responsibility; and (4) team building.
   - Table 3 shows this relationship.

10. Six months after the programs, participants felt that the experience had, on the whole, contributed a "fair amount" to their successful performance as leaders:
   - The mean rating on a four-point scale was 2.8.
   - Only half of the six "most useful" attributes were found to be readily improved by the leadership programs: (1) adaptable, open to change; (2) insightful; and (3) visionary. Thus, participants gained only a "fair amount" from the programs (see Table 3).

11. An average of fifty-seven percent of the participants in each program engaged in a greater number of leadership activities during the six-month period following instruction than they had engaged in before the instruction:
   - There were no differences among the programs in the percent of participants who engaged in a greater number of leadership activities.
   - Forty-five percent of the additional leadership activities were job-related, twenty-four percent were in new professional roles, twenty-one percent were community activities, and ten percent were social.

Table 3

Relationships Among Attributes: Ability to Explain Performance, Usefulness, and Readiness to Change

Leader Attribute	Best Explain Leader Performance*	Most Useful to Participants	Readiness to Change	
			Most Ready	Most Resistant
Adaptable, open to change	X	X	X	
Insightful	X	X	X	
Willing to accept responsibility	X	X		X
Team building	X	X		X
Motivating others	X			
Gathering and managing information	X			
Visionary		X	X	
Communication		X		X

* From Moss & Liang, 1990.

12. Eighteen percent of the participants reported engaging in additional leadership *training* activities during the six-month period following instruction:
    - There were significant differences among programs in the percent of students who engaged in further training, but these percentages were *not* related to hours of supervised instruction or number of attributes that were significantly improved.
    - The kinds of further training reported were primarily focused readings, courses, and workshops.

13. The programs appear to be having important and desirable institutional impacts:
    - Four institutions were adding new leadership courses to their regular graduate curriculums, and three other institutions were revising existing graduate or undergraduate courses to include greater emphasis on leadership development.
    - A number of noncurricular outcomes were also reported by directors (e.g., initiating an institution-wide study of leadership development opportunities).

14. Certain kinds of program activities appear to be effective in improving certain leader attributes:
    - Self-assessment (with planning) improved the attributes of confident, accepting of self; adaptability, open to change; and appropriate use of leadership styles.
    - Observations and interviews of leaders at work improved the attributes of visionary, and courageous, risk-taker.

15. *LAI* is a useful assessment tool:
    - *LAI* was sensitive to the effects of treatments on attributes (means and distributions).
    - It was not sensitive to differences in age, experiences as a school administrator, experiences as a nonschool manager, gender, academic status, or part- or full-time participation in a degree program among graduate students.
    - The attributes it assesses were used by participants in their leadership activities.

RECOMMENDATIONS

Based upon the results of the meta-analysis, the following recommendations seem warranted:

1. The success of the ten leadership development programs justifies implementing a greater number of programs for graduate students in vocational education, and continuing research and development to improve their effectiveness.

2. Leadership development programs for graduate students should include the following characteristics:
    - Careful course structure and direction by the instructor are necessary to keep participants focused on the program objectives.
    - Participants should be helped to construct a cognitive model of leadership that can guide their further leadership development. Readings, presentations by role models, and "shadowing" experiences are helpful in this regard.

- Team building experiences should be provided early in the program to build a safe, supportive environment in which attribute changes are encouraged and facilitated.
- At the same time, a number of self-assessment instruments (inventories and tests) of leader qualities and styles should be administered to (1) sensitize participants to their weaknesses as a basis for improvement and to their strengths as a foundation for building upon; and (2) help participants understand, respect, and appreciate behavioral differences among individuals.
- Opportunities to plan for self-improvement, based upon self-assessment, are useful mechanisms to encourage reflection and goal setting.
- Sufficient time must be allowed for guided practice in applying the attributes to be changed and for reflecting on the experience. Simulations, exercises, games, and field assignments are useful tools. The time allocated to practice seems to distinguish between programs that teach about leadership and those that bring about behavioral modifications.

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